

TECHNICAL SPECIFICATIONS

WASHINGTON STATE FERRIES
M.V. KLAHOWYA DOCKSIDE PRESERVATION

CONTRACT NO. 00-6973

TECHNICAL SPECIFICATIONS

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TECHNICAL SPECIFICATIONS

For the following Technical Specifications, the Contractor is to provide all labor, material and equipment to accomplish each and every Bid Item unless otherwise specified.

The Specification Item sub-titles in brackets are for WSF internal use only, for Life Cycle Cost modeling. Bidders should ignore such bracketed sub-titles.

1. **BERTH VESSEL**

{STRUCTURAL PRESERVATION}

A. M.V. KLAHOWYA Vessel Particulars:

Length: 310' 2", Beam: 73' 2", Draft: 15' 6", Gross Tons: 2055.

B. Provide labor, material, and equipment to berth the Vessel for accomplishment of the Work specified herein.

C. When the terms forward, aft, port or starboard are used, No. 1 End is to be considered the bow.

2. **TEMPORARY SERVICE**

{STRUCTURAL PRESERVATION}

A. Install one (1) telephone on board in a location designated by the Vessel Staff Chief Engineer. The telephone is to have one (1) outside line with toll-free access to Seattle and vicinity and, if different, one (1) line for local numbers. The telephone shall have touch-tone service if available from the Contractor's telephone system.

- 1 B. Provide and maintain electricity, water, sewage removal, safe lighted
2 gangway and trash removal services while Vessel is in the Contractor's
3 facility.
4
- 5 C. Provide Safety and Security for the entire Vessel throughout the repair period
6 until such time as the WSF has accepted redelivery of the Vessel. Every
7 reasonable precaution shall be taken to protect the Vessel from the hazards of
8 fire, flooding, pilferage, malicious damage, and other events including
9 cataclysmic phenomena of nature.
10
- 11 D. Provide and maintain comprehensive and effective fire prevention and fire
12 detection, and fire fighting programs and systems sufficient to ensure the
13 safety and integrity of the Vessel. Provide personnel trained in shipboard fire
14 fighting techniques and also trained to cooperate with and assist local fire
15 fighting organizations. Provide sufficient shore fire lines to ensure an
16 adequate supply of fire fighting water, at sufficient pressure, and maintain an
17 adequate number of tested fire-hoses aboard the Vessel to effectively fight
18 fires at any location in the Vessel.
19
- 20 E. Provide and maintain portable fire extinguishers in sufficient quantity, and of
21 the appropriate type, to combat local fires of any class. Provide sufficient fire
22 watches, including roving watches as may be required, to ensure that fires that
23 may be inadvertently started by welding sparks or heat, electrical malfunction.
24
- 25 F. Clean and gas free all spaces and tanks associated with the Work, as
26 necessary, and obtain a Marine Chemist Certificate for "SAFE FOR
27 WORKERS", and "SAFE FOR HOT WORK". Maintain the Certificates
28 during the course of the Work for all Work Items of this Contract.
29
- 30 G. At all times that welding is being done on board the Vessel while it is water
31 born, the Contractor shall provide and maintain rigid control of welding and
32 grounding for the protection of the hull, hull systems, and appendages. The
33 Vessel shall be properly grounded throughout the period of the Contract
34 except when the Vessel is underway for Trials. There shall be no welding or
35 air arcing undertaken aboard the Vessel until a hull corrosion protection
36 system has been installed to the satisfaction of the WSF Representative and
37 hull ground cables are installed. To insure proper control, the Contractor shall
38 adhere to the following requirements:

1. Welding power sources used on the Vessel, whether shore-based or placed on the Vessel shall not be used for any other Vessel or structure.
2. Hull ground cables attached to the Vessel shall never be grounded to any other Vessel or structure. Hull ground cables shall be independent of any welding return cables.
3. All welding cables, electrode, welding return cables, hull grounds or temporary power cables shall be completely insulated and never permitted to sag into the water.
4. Grounding contact surfaces shall be thoroughly cleaned to bright, bare metal prior to connection. Grounding lugs shall be secured tightly to grounding plates and the connections periodically checked to ensure that they remain tightly bonded and corrosion free. Only one (1) cable per ground stud shall be allowed, whether its service is hull grounding or welding return. The total cross-sectional area of hull ground wire shall be one million circular mils minimum per 1,000 amperes per 100 feet.
5. The Contractor shall provide all materials and labor required to install and maintain temporary passive galvanic corrosion protection needed to maintain an acceptable hull potential. The Vessel's active corrosion protection system will be secured while the Vessel is in the shipyard.
6. Provide and maintain zinc anodes for hull corrosion protection. Hull potential shall be in the of $+0.75$ to 0.9 V as measured on a certified U.S. Filter Electro Catalytic corrosion potential meter, silver-silver chloridem Model 33419-3. This shall be the only meter used to measure hull potential.
7. Hull potential readings shall be taken twice daily until satisfactory potentials have been obtained and at least weekly thereafter. A written log shall indicate the station at which each reading was taken, the amplitude and polarity of the reading, the time and date, and the name of the individual making the readings. This record shall be made available to the WSF Representative upon request.
8. Provide a copy of an updated hull potential record to the WSF Representative in conjunction with progress billings.

1 **PAINTING OF VESSEL AND HULL PRESERVATION**

2 **(ATTACHMENT NO. 1)**

3 **MARINE COATING SPECIFICATION AND COLOR SCHEME**

4
5 **Area Preparation, Surface Preparation, Grit Blasting, Paint Coatings, and**
6 **Inspection for Vessel's hull, curtain plates, casing and super structure shall**
7 **be in accordance with Washington State Ferries' Marine Coating**
8 **Specification, 01/03 unless otherwise specified in the following**
9 **Specifications.**
10

11 **GENERAL CONSTRUCTION REQUIREMENTS**

12 **(ATTACHMENT NO. 2)**

13 **SUPPLEMENTAL SPECIFICATION**

14
15 **Details of all piping, structural and electrical installations shall be in**
16 **accordance with Attachment No. 2, WSF General Construction**
17 **Requirements, unless otherwise specified in the following Specifications.**
18
19

20 **3. PASSENGER DECK STEEL REPLACEMENT**

21 **{STRUCTURAL PRESERVATION }**

22
23 A. Renew approximately 500 square feet total of 7.65 pound wasted deck steel in
24 the Passenger Cabin as per **Attachment No. 3**, M/V KLAHOWYA, Sketch
25 Passenger Deck Steel Replacement.

26 1. Area (1) approximately 20 square feet from approximately frame 48
27 on No. 2 End Starboard Side.

28 Area (2) approximately 100 square feet from approximately frame 14
29 to frame 19 on No. 2 End Starboard Side.

30 Area (3) approximately 60 square feet from approximately frame 3 to
31 frame 6 on No. 2 End Starboard Side.

32 Area (4) approximately 100 square feet from approximately frame 1 to
33 frame 8 on No. 1 End Starboard Side.

- 1 Area (5) approximately 20 square feet at frame 21 on No. 1 End
2 Starboard Side.
- 3 Area (6'') approximately 40 square feet at frame 23 on No. 1 End
4 Starboard Side.
- 5 Area (7) approximately 20 square feet at frame 46 on No. 1 End
6 Starboard Side.
- 7 Area (8) approximately 60 square feet from approximately frame 44 to
8 frame 45 on No. 2 End Center tunnel.
- 9 Area (9) approximately 20 square feet at frame 30 on No. 2 End
10 Center tunnel.
- 11 Area (10) approximately 20 square feet at frame 19 on No. 1 End Port
12 Side.
- 13 Area (11) approximately 20 square feet at frame 30 on No. 2 End Port
14 Side.
- 15 Area (12) approximately 20 square feet at frame 46 on No. 2 End Port
16 Side.
- 17 A joint survey between the Contractor and the WSF Inspector will be
18 conducted to layout the actual steel to be renewed. The Contract will be
19 adjusted upward or downward for actual amount renewed as authorized by the
20 WSF Inspector.
- 21
- 22 B. Clean and gas free all spaces associated with the Work, as necessary, and
23 obtain a Marine Chemist Certificate for "SAFE FOR WORKERS", and
24 "SAFE FOR HOT WORK". Maintain the Certificate during the course of the
25 Work. Provide fire watches as required.
- 26
- 27 C. All new steel shall be grit blasted to SSPC-SP 10, Near White Blast and
28 immediately primed with weld-through primer, which is compatible with the
29 coating systems used on the Vessel.
- 30
- 31 D. Remove the deck coverings, underlayment, seats, seat sub bases, foundations,
32 joiner work, ventilation ducting and all other interferences as required to
33 complete this work. All seats, seat sub bases, foundations and all
34 interferences removed shall be stored in a clean dry area for reinstallation
35 upon completion of work.

- 1 E. Provide the WSF Inspector with three (3) copies of a detailed sketch showing
2 the size and the exact location of all deck steel renewed.
3
- 4 F. Upon completion of welding and prior to coating all welds shall be tested
5 using a method acceptable to the WSF and USCG Inspector.
6
- 7 G. After completion of all hot work and steel renewals prepare all areas of new
8 steel and damaged paint to SSPC-SP 3, Power Tool Cleaning. Apply one (1)
9 coat Wasser MC Miozinc Green, to obtain 3 to 4 mils (DFT) to all new
10 surfaces and prepared surfaces. Apply one (1) coat Wasser MC CR Buff, to
11 obtain 3 to 4 mils (DFT) to all new surfaces and prepared surfaces. Hand-
12 stripe all edges. Topcoat with Wasser MC Luster, to a minimum of 3 mils
13 (DFT) to match surrounding color.
14
- 15 H. Install new USCG approved structural fire protection underlayment level with
16 the surrounding deck area in all areas affected by this work. The new
17 underlayment shall provide A-30 structural fire protection. Provide new deck
18 coverings, to match existing, in all areas affected by this work. New
19 underlayment and tile shall contain no ACM.
20
- 21 I. Upon completion of all work reinstall all seats, seat sub bases, foundations,
22 joiner work, ventilation ducting and all other interferences removed. Clean
23 and wax deck areas affected by this work.

24 **4. JOINER DOOR RENEWAL**
25 { STRUCTURAL PRESERVATION }
26

- 27
- 28 A. Purchase and install nineteen (19) new joiner doors as shown on **Attachment**
29 **No. 4, M/V KLAHOWYA, WSF DRAWING 4439-004-02, DOOR LIST**
30 **AND HARDWARE SCHEDULE.**
- 31
- 32 B. New joiner doors and frames shall be manufactured in accordance with CFR-
33 46-72.05. Frames are to be steel angle with Stainless Steel flat bar sill.
34 Flanged frame shall be ¼" thick with a 2" bolting frame. Panels are to be
35 eleven gauges, formed and welded on all edges and suitably insulated for the
36 bulkhead requirement. Panel is to be stiffened with box tube stiffeners at
37 edges, around windows and in way of the closer. Internal core of the doors
38 shall be primed.
- 39
- 40 C. Remove and replace the following doors: Port and Starboard stack fire doors,
three (3) doors on the No. 1 and No. 2 crew quarter cabins, four (4) plenum
supply doors, deck gear locker on the main deck, CO2 room, Engine room
No. 2 access door, Deck crew head, Emergency Gear Locker and two (2)
cleaning gear locker doors in the main passenger cabin.

- 1
2 D. On the car deck renew the Battery room door and Crews day room door with
3 two (2) WSF supplied doors.

4 **TOPSIDE PREPARATION AND PAINTING**

5 **TOPSIDE ZONE DESCRIPTIONS**

6 The M.V. KLAHOWYA is divided into eight (8) Zones for inspection, surface
7 preparation, painting, and bidding purposes. No areas in the Zones have been
8 intentionally omitted for preparation or painting. It is the Contractor's responsibility
9 to prepare, and coat all surfaces as required by the Specifications. The following
10 Zone descriptions are provided for identification purposes:

11 **NOTE:**

12 Prior to commencing surface preparation the Contractor will present all areas for
13 inspection, by the WSF Inspector and the Vessel Staff Chief Engineer, of the
14 protective measures taken to prevent harm or damage to the Vessel's equipment,
15 other surfaces, and systems.

16 **Zone No. 1** Port and Starboard Exterior Curtain Plating from the inboard top edge
17 of the Guard to the Passenger Deck level and from the Curtain Plate
18 extremes at No. 1 and No. 2 End.

19 **Zone No. 2** Port and Starboard Interior Curtain Plating from the inboard top edge
20 of the Guard to the Passenger Deck level and from the Curtain Plate
21 extremes at No. 1 and No. 2 End, including the Fixtures, Vents and
22 Louvers. Vehicle Deck vehicle lanes area extending from No. 1 to No.
23 2 End. This area includes the curbing, forward face of the thwart ship
24 coaming between the pickle forks, inboard Machinery Casings
25 surfaces, Overhead, Ventilation Louvers, Ventilation Ducting, Piping,
26 Curbing, Light Fixtures, and all Appendages, including all Machinery
27 Casing vestibules.

28 **Zone No. 3** Passenger Deck exterior surfaces (outside of the Passenger Cabin)
29 from the Passenger Deck level to the top edge of the Curtain Plate
30 above the Passenger Cabin windows and below Texas Deck handrails,
31 includes all weather surfaces of both the Port and Starboard Passenger
32 Cabin exteriors, Troughs and Safety Handrails below the windows,
33 overhang above the windows, Drain Pipes and hangers, No. 1 and No.
34 2 End, Promenade Deck exteriors, No. 1 and No. 2 End, Promenade
35 Deck interiors, No. 1 and No. 2 End pickle fork areas, all attachments
36 and Appurtenances, Ladders, Overheads, Bulkheads, Fire Stations,
37 Doors and Passenger seating.

- 1
2 **Zone No. 4** Deck surface areas includes Texas Deck level deck and all Housetops,
3 Passenger Deck level decks, Promenades and pickle forks, Vehicle
4 Deck walkways and all Ladders, Stairways, Landings, Safety areas
5 and Non - Skid Vehicle Decks.
- 6 **Zone No. 5** Pilothouse and cabins including the elevator trunk exterior surfaces,
7 includes all weather surfaces including Safety Handrails below the
8 windows, overhang above the windows, Drain Pipes and hangers, all
9 attachments and Appurtenances, Ladders, Overheads, Bulkheads, Fire
10 Stations.
- 11 **Zone No. 6** Exhaust stack and cabin including all exterior surfaces, includes all
12 weather surfaces including Safety Handrails below the windows,
13 overhang above the windows, Drain Pipes and hangers, all attachments
14 and Appurtenances, Ladders, Overheads, Bulkheads, Fire Stations.
- 15 **Zone No. 7** Stairway vertical and overhead surfaces from Lower Vehicle Deck to
16 Passenger Deck.
- 17 **Zone No. 8** Handrails, Railings, Screens, and Gates on all decks, Ladders,
18 Passenger Deck to the top of the Mast.
- 19 **5. PREP AND PAINT ZONE NO. 1, CURTAIN PLATE**
20 **{STRUCTURAL PRESERVATION }**
21
- 22 A. Perform a Low Pressure Water Cleaning (LP WC) at 3,000 - 5,000 PSI to
23 achieve a condition of SC-1 IAW Table 2 (Non-visual Surface Preparation
24 Definitions) in SSPC-SP 12/NACE 5 Publication, in Zone No. 1. The wand
25 shall be held no more that twelve inches (12") from surface being washed.
26 Use **International GMA** or equal when washing.
27

- 1 B. Perform an inspection of the entire fresh water washed areas to the
2 satisfaction of the WSF Inspector prior to proceeding with any preparation for
3 painting, or painting.

4 **NOTE:**

5 For bidding purposes, assume that **600 Square Feet** (approximately 300 Sq. ft. per
6 side) will require surface preparation. Upon completion of the preparation and
7 painting, the Contract will be adjusted upward or downward to account for the actual
8 area authorized by the WSF Inspector.

- 9 C. Prepare various areas, as authorized by the WSF Inspector, to an SSPC-SP3,
10 Power Tool Cleaning.

- 11 D. Apply one (1) coat Wasser MC Miozinc Green, to obtain 3 to 4 mils (DFT) to
12 all prepared surfaces. Apply one (1) coat Wasser MC CR Buff; to obtain 3 to
13 4 mils (DFT) to all prepared surfaces. Hand-stripe all edges.

- 14 E. Topcoat the entire Zone No. 1 area with Wasser MC Luster, to a minimum of
15 3 mils (DFT) to match surrounding color.

16 **6. PREP AND PAINT ZONE NO. 2, VEHICLE DECK**
17 {STRUCTURAL PRESERVATION }

18 **NOTE:**

19 The Contractor is advised to exercise care and caution to assure that all insulation,
20 light fixtures, speakers, cabling, alarms and appurtenances are protected and not
21 damaged during the course of this work.

- 22 A. Map all signs and stencils prior to being surface preparation. Renew all signs
23 and stencils upon completion of painting.

- 24 B. Remove the bird guard spike strips and bird wire from all flat surfaces and
25 piping prior to being surface preparation. Install new strips and wire upon
26 completion of painting. Estimate 600 ft of spike strips and 600 ft of wire will
27 be required.

- 28 C. Remove approximately 100 unused studs from the curtain plate and overhead.
29 Grind surface smooth.

- 30 D. Install two (2) flush mounted 2 ½ inch deck plugs through the car deck over
31 the shaft alleys at locations designated by the Vessel Staff Chief.

- 32 E. Perform a Low Pressure Water Cleaning (LP WC) at 3,000 - 5,000 PSI to
33 achieve a condition of SC-1 IAW Table 2 (Non-visual Surface Preparation
34 Definitions) in SSPC-SP 12/NACE 5 Publication, in Zone No. 3. The wand
35 shall be held no more that twelve inches (12") from the surface being washed.
36 Use Ameron, Prep 88 or International GMA or equal when washing.

- 1 F. Perform an inspection of the entire fresh water washed areas to the
2 satisfaction of the WSF Inspector prior to proceeding with any preparation for
3 painting, or painting.
- 4 G. Prepare Zone No. 2 areas of abrasion and corrosion. For bidding purposes
5 assume 4,000 square feet will require preparation to a Hydroblasting standard
6 HB 2 1/2, L Light Flash Rusting or grit blast to an SSPC-SP6, Commercial
7 Blast Cleaning. Areas that cannot be blasted shall be prepared to an SSPC-
8 SP11, Power Tool Cleaning to Bare Metal. Include the top side of the
9 stiffener above the window cutout and curbing. Remove the MES containers
10 prior to beginning hydroblasting. All rat holes and sharp edges of all angles
11 and cutouts shall be mechanically ground to remove any sharp edges. The
12 Zone includes fire stations and fueling and tank vent stations.
- 13 H. Install up to 600 linear feet of Sinkaflex 1-A, caulking shall be applied skip
14 welded stiffener seams on the curtain plate and overhead of the vehicle lanes.
- 15 I. Apply one (1) coat Wasser MC Miozinc Green, to obtain 3 to 4 mils (DFT) to
16 all prepared surfaces. Apply one (1) coat Wasser MC CR Buff; to obtain 3 to
17 4 mils (DFT) to all prepared surfaces. Hand-stripe all edges.
- 18 J. Apply one (1) coat of Wasser MC Luster, of proper color to match
19 surrounding area, to a minimum of 3 mils (DFT), to the entire area of Zone
20 No. 2.

21 **7. PREP AND PAINT ZONE NO. 3, PASSENGER CABIN EXTERIOR**
22 **{STRUCTURAL PRESERVATION }**
23

- 24 A. Perform a Low Pressure Water Cleaning (LP WC) at 3,000 - 5,000 PSI to
25 achieve a condition of SC-1 IAW Table 2 (Non-visual Surface Preparation
26 Definitions) in SSPC-SP 12/NACE 5 Publication, in Zone No. 3. The wand
27 shall be held no more that twelve inches (12") from surface being washed.
28 Use Ameron, Prep 88 or International GMA or equal when washing.
- 29 B. Perform an inspection of the entire fresh water washed areas to the
30 satisfaction of the WSF Inspector prior to proceeding with any preparation for
31 painting, or painting.
- 32 C. Upon completion of Fresh Water Wash, the Contractor shall wash the external
33 surfaces of all windows to remove any streaking, paint chips, and any other
34 residue left by the water wash.
- 35 D. Cut limber holes in seven stiffeners at the No. 1 and 2 End Promenade
36 interiors.
- 37 E. Prepare areas of abrasion and corrosion. For bidding purposes assume 2,000
38 square feet will require preparation.
39

NOTE:

The Contractor shall have the option to grit blast to an SSPC-SP6, Commercial Blast Cleaning or Hydroblast to Hydroblast Standard, HB 2 ½ L, Light Flash Rusting.

F. Apply one (1) coat Wasser MC Miozinc Green, to obtain 3 to 4 mils (DFT) to all prepared surfaces. Apply one (1) coat Wasser MC CR Buff, to obtain 3 to 4 mils (DFT) to all prepared surfaces. Hand-stripe all edges.

G. Apply one (1) coat of Wasser MC Luster, of proper color to match surrounding area, to a minimum of 3 mils (DFT), to the entire area of Zone No. 3.

**8. PREP AND PAINTING ZONE NO. 4, DECKS AND CABIN TOPS
{STRUCTURAL PRESERVATION }**

A. Perform a Low Pressure Water Cleaning (LP WC) at 3,000 - 5,000 PSI to achieve a condition of SC-1 IAW Table 2 (Non-visual Surface Preparation Definitions) in SSPC-SP 12/NACE 5 Publication, on the Texas deck Cabins and pilothouse tops. The wand shall be held no more that twelve inches (12”) from surface being washed. Use **AMERON, Prep 88 or International GMA** or equal when washing. Perform an inspection of the entire fresh water washed areas to the satisfaction of the WSF Inspector prior to proceeding with any preparation for painting, or painting.

B. Prepare the entire area of the Texas Deck to SSPC-SP6, Commercial Blast Cleaning with a track blaster to obtain a 2 to 3 mil profile. Remove all traces of blast beads from all areas of the Vessel. Areas that are inaccessible to a track blaster shall be prepared to SSPC-SP3, Power Tool Cleaning.

C. Prepare areas of abrasion and corrosion on the pilothouse and cabin tops. For bidding purposes assume 1,000 square feet will require preparation. Upon completion of the preparation and painting, the Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

D. Apply one (1) coat of Wasser MC MIOZINC to all prepared areas obtain 3 to 4 mils (DFT).

E. Apply one (1) coat of Wasser MC Luster to all prepared areas obtain 3 to 4 mils (DFT) mixed with ALUMINUM Oxide 24-35 mesh.

F. Apply one (1) coat of Wasser M(12) C Luster to all areas of the Texas deck; pilothouse and cabin tops obtain 3 to 4 mils (DFT).

**9. PREP AND PAINTING ZONE NO. 5, PILOTHOUSE AND
SUPERSTRUCTURE**

1 {STRUCTURAL PRESERVATION}

2
3 For bidding purposes, assume that 2000 Square Feet will require preparation. Upon
4 completion of the preparation and painting, the Contract will be adjusted upward or
5 downward to account for the actual area authorized by the WSF Inspector.

6 A. Perform a Low Pressure Water Cleaning (LP WC) at 3,000 - 5,000 PSI to
7 achieve a condition of SC-1 IAW Table 2 (Non-visual Surface Preparation
8 Definitions) in SSPC-SP 12/NACE 5 Publication, in Zone No. 5. The wand
9 shall be held no more that twelve inches (12") from surface being washed.
10 Use Ameron, Prep 88 or International GMA or equal when washing.

11 B. Prepare areas of abrasion and corrosion. For bidding purposes assume 1,000
12 square feet will require preparation.

13 **NOTE:**

14 **The Contractor shall have the option to grit blast to an SSPC-SP6, Commercial**
15 **Blast Cleaning or Hydroblast to Hydroblast Standard, HB 2 ½ L, Light Flash**
16 **Rusting.**

17 C. Apply one (1) coat Wasser MC Miozinc Green, to obtain 3 to 4 mils (DFT) to
18 all prepared surfaces. Apply one (1) coat Wasser MC CR Buff, to obtain 3 to
19 4 mils (DFT) to all prepared surfaces. Hand-stripe all edges.

20 D. Apply one (1) coat of Wasser MC Luster, of proper color to match
21 surrounding area, to a minimum of 3 mils (DFT), to the entire area of Zone
22 No. 5.

23 **10. PREP AND PAINTING ZONE NO. 6, STACKS AND MASTS**

24 {STRUCTURAL PRESERVATION}

25 For bidding purposes, assume that **1000 Square Feet** will require preparation, staging
26 will be required. Upon completion of the preparation and painting, the Contract will
27 be adjusted upward or downward to account for the actual area authorized by the
28 WSF Inspector.

29 A. Perform a Low Pressure Water Cleaning (LP WC) at 3,000 - 5,000 PSI to
30 achieve a condition of SC-1 IAW Table 2 (Non-visual Surface Preparation
31 Definitions) in SSPC-SP 12/NACE 5 Publication, in Zone No. 6. The wand
32 shall be held no more that twelve inches (12") from the surface being washed.
33 Use Ameron, Prep 88 or International GMA or equal when washing.
34

- B. Prepare areas of abrasion and corrosion. For bidding purposes assume 1,000 square feet will require preparation.

NOTE:

The Contractor shall have the option to grit blast to an SSPC-SP6, Commercial Blast Cleaning or Hydroblast to Hydroblast Standard, HB 2 ½ L, Light Flash Rusting.

- C. Apply one (1) coat Wasser MC Miozinc Green, to obtain 3 to 4 mils (DFT) to all prepared surfaces. Apply one (1) coat Wasser MC CR Buff, to obtain 3 to 4 mils (DFT) to all prepared surfaces. Hand-stripe all edges.
- D. Apply one (1) coat of Wasser MC Luster, of proper color to match surrounding area, to a minimum of 3 mils (DFT), to the entire area of Zone No. 6.

11. PREP AND PAINTING ZONE NO. 7, STAIRWELLS
{STRUCTURAL PRESERVATION}

- A. Perform a Low Pressure Water Cleaning (LP WC) at 3,000 - 5,000 PSI to achieve a condition of SC-1 IAW Table 2 (Non-visual Surface Preparation Definitions) in SSPC-SP 12/NACE 5 Publication, in Zone No. 7. The wand shall be held no more that twelve inches (12") from the surface being washed. Use Ameron, Prep 88 or International GMA or equal when washing.

NOTE:

The stairways and landings are between the passenger doors down to the vehicle deck.

- B. Remove the deck tile and bull nose on the stair treads and the matting on the landing.
- C. Prepare areas of abrasion and corrosion. For bidding purposes assume 1,000 square feet will require preparation.

NOTE:

The Contractor shall have the option to grit blast to an SSPC-SP6, Commercial Blast Cleaning or Hydroblast to Hydroblast Standard, HB 2 ½ L, Light Flash Rusting.

- D. Apply one coat (1) Wasser MC Miozinc Green, to obtain 3 to 4 mils (DFT) to all new surfaces and prepared surfaces. Apply one (1) coat Wasser MC CR Buff, to obtain 3 to 4 mils (DFT) to all new surfaces and prepared surfaces. Hand-stripe all edges. Top-coat with Wasser MC Luster, to a minimum of 3 mils (DFT) to match.
- E. Install new deck tile and bull nose using blind rivets on the stair threads. The landings shall have non-skid applied in accordance with Item 8.

1 **12. PREP AND PAINTING ZONE NO. 8, HANDRAILS AND SCREENS**
2 {STRUCTURAL PRESERVATION }

- 3 A. Prepare handrails by roughing the surface with sand paper and thinner wiping
4 on the pickle forks and Texas Deck.
- 5 B. Remove the screens from the pickle fork railings. Grit blast to an SSPC-SP6,
6 Commercial Blast Cleaning prior to coating.
- 7 C. Apply one (1) coat Wasser MC Miozinc Green, to obtain 3 to 4 mils (DFT) to
8 all prepared surfaces. Apply one (1) coat Wasser MC CR Buff; to obtain 3 to
9 4 mils (DFT) to all prepared surfaces. Hand-stripe all edges.
- 10 D. Top-coat with Wasser MC Luster, to a minimum of 3 mils (DFT) to match the
11 entire Zone No. No. 8.
- 12 E. Install the pickle fork screens using all new 316SS hardware.

13 **13. SATELLITE COMPASS INSTALLATION**
14 {NAVIGATION}

- 15 A. Install WSF furnished FURUNO Satellite Compass, Model SC-110 in
16 accordance with **Attachment No. 13**, WSF Dwg. No. 8402-647-094-01, MV
17 KLAHOWYA, Satellite Compass Installation Wiring Diagram, **Attachment**
18 **No. 13A**, WSF Dwg No. 8402-647-015-01, MV KLAHOWYA, Antenna
19 Foundation for SC110 Satellite Compass Location and Construction Details.
- 20 B. Install the WSF furnished Satellite Compass Antenna on top of the No. 1 End
21 mast as shown on **Attachment No. 13A**. Orientation of the antenna to the
22 Vessel fore and aft line is critical.
- 23 C. Relocate the existing radio and telephone antennas from the top of the mast to
24 a location on the aft End of the pilot house overhead on Contractor provided
25 foundations, exact location as designate by the WSF Construction Master.
26 Provide and install new watertight penetrations in the aft bulkhead of the
27 pilothouse of the size and type to allow the antenna leads to pass through.
- 28 D. Install cable run from new antenna down the mast to the aft bulkhead of the
29 pilothouse. Provide and install new watertight penetrations in the aft
30 bulkhead of the pilothouse of the size and type to allow the antenna leads to
31 pass through.
- 32 E. Install the SC-1101 Processor unit in the pilothouse in location designated by
33 the WSF Representative and as shown on **Attachment No. 13**. The
34 orientation of this unit to the Vessel fore and aft line must be +or- 2.5 degrees.
35 The unit must be mounted parallel to the base line of the Vessel.
- 36 F. WSF will provide the services of an Electronics Contractor to make the final
37 terminations.

- 1 G. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool
2 Cleaning. Apply one (1) coat Wasser MC Miozinc Green, to obtain 3 to 4
3 mils (DFT) to all new surfaces and prepared surfaces. Apply one (1) coat
4 Wasser MC CR Buff, to obtain 3 to 4 mils (DFT) to all new surfaces and
5 prepared surfaces. Hand-stripe all edges. Topcoat with Wasser MC Luster, to
6 a minimum of 3 mils (DFT) to match surrounding color.

7 **14. RADAR INSTALLATION**
8 {NAVIGATION}

- 9 A. Modify the radar pedestals in the No. 1 and 2 pilothouses to accept the new
10 WSF furnished radar units. Lower the existing pedestals to six inches (6")
11 above the deck and add a new 10.2-pound plate to mount the radars on.
- 12 B. Remove and restore all interferences including insulation disturbed by
13 mounting of Items and installing transits. Install four (4) new 4-inch mcp's.
14 One (1) in each radar foundation and one (1) in each overhead of the
15 pilothouses.
- 16 C. Stage the No. 1 and 2 masts to allow for the mounting of new antennas by the
17 WSF supplied Electronics Contractor.
- 18 D. Conduct megger and electrical tests of all new cabling to insure the
19 installation is correct. Provide WSF Inspector with three (3) copies of test
20 results.
- 21 E. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool
22 Cleaning. Apply one (1) coat Wasser MC Miozinc Green, to obtain 3 to 4
23 mils (DFT) to all new surfaces and prepared surfaces. Apply one (1) coat
24 Wasser MC CR Buff, to obtain 3 to 4 mils (DFT) to all new surfaces and
25 prepared surfaces. Hand-stripe all edges. Top-coat with Wasser MC Luster,
26 to a minimum of 3 mils (DFT) to match surroundings.

27 **15. PILOTHOUSE 24VDC INSTALLATION**
28 {NAVIGATION}

- 29 A. Modify the 24 Volt DC Distribution System for the pilothouse electronic
30 equipment as indicated on **Attachment No. 15**, WSF DWG No. 8402-647-
31 090-03, M/V KLAHOWYA, Pilothouse 24V DC Distribution System
32 Modifications One-Line Diagram.
- 33 B. Remove and restore all interferences including insulation disturbed by
34 mounting of Items and installing transits.
- 35 C. Conduct megger and electrical tests of all new cabling to insure the
36 installation is correct. Provide the WSF Inspector with three (3) copies of test
37 results.
- 38 D. Connections to RDU A09 and A10 in the pilothouse consoles will be done by
39 a WSF supplied Contractor.

- 1 E. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool
2 Cleaning. Apply one (1) coat Wasser MC Miozinc Green, to obtain 3 to 4
3 mils (DFT) to all new surfaces and prepared surfaces. Apply one (1) coat
4 Wasser MC CR Buff, to obtain 3 to 4 mils (DFT) to all new surfaces and
5 prepared surfaces. Hand-stripe all edges. Top-coat with Wasser MC Luster,
6 to a minimum of 3 mils (DFT) to match.

7 **16. LAN INSTALLATION**
8 {NAVIGATION}

- 9 A. Install new fiber optic LAN and antennas as shown on **Attachment No. 16**,
10 WSF Dwg. M/V KLAHOWYA, Super-Lan/Security & Surveillance/ Wireless
11 Over Water Installation. Develop cable routing for the fiber optic and Cat 5E
12 cables.

13 **NOTE:**

14 Wherever new penetrations are required they shall maintain the watertight and fire
15 ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and
16 deck penetrations may be reused. New Multi-Cable Transits shall be Nelson type.
17 Test all deck, bulkhead and hull penetrations in company with and to the satisfaction
18 of the USCG and WSF Inspector, and the Staff Chief Engineer.

- 19 B. Prior to installing any fiber optic cables perform an OTDR test and submit
20 results to the WSF Inspector. Install new cables required by **Attachment No.**
21 **16**. Insure cables and wires installed by this Item are run and marked, and
22 continuity tests are made in accordance with **Attachment No. 2**. Perform a
23 second OTDR on the fiber cables after installation. Compare the results to the
24 pretest and submit results to the WSF Inspector.

- 25 C. Provide and install cable and power to the UPS's from the distribution panels.

- 26 D. Install foundations and antennas as required on **Attachment No. 16**, welding
27 shall be in accordance with **Attachment No. 2**. Foundations shall be installed
28 for all Items identified as OFE 1, 2, and 3.

- 29 E. Install coax from the radio enclosures to the antenna foundations. Terminate
30 and end seal spare lengths of cable.

- 31 F. WSF will provide the services of a licensed Electronics Contractor to mount
32 the OFE equipment, perform final terminations and system check out.

- 33 G. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool
34 Cleaning. Apply one (1) coat Wasser MC Miozinc Green, to obtain 3 to 4
35 mils (DFT) to all new surfaces and prepared surfaces. Apply one (1) coat
36 Wasser MC CR Buff, to obtain 3 to 4 mils (DFT) to all new surfaces and
37 prepared surfaces. Hand-stripe all edges. Topcoat with Wasser MC Luster, to
38 a minimum of 3 mils (DFT) to match surrounding.

1 **17. SHAFT ALLEY BILGE CLEANING**

2 {STRUCTURAL PRESERVATION }

- 3 A. Pump dry and clean the No. 1 and 2 shaft alley bilges. Work shall be
4 scheduled after a WSF supplied Contractor completes inspections of the shaft
5 seals. Dispose of 200 gallons of oil from the bilges.
- 6 B. Thoroughly degrease and clean the bilges of the No.1 and No. 2 shaft alleys
7 by a water wash to SSPC-SP 12/NACE 5 Low Pressure Water Cleaning (LP
8 WC) WJ-3. Do not use any products that etch the existing paint.

9 **18. SECURITY SYSTEM INSTALLATION**

10 {SECURITY}

- 11 A. Install security modifications shown on **Attachment No. 18 thru 18D.**
12 (**Attachment No. 18**, MV. KLAHOWYA, WSF DRAWING, 8402-639-005-
13 01, PILOTHOUSE SECURITY MODIFICATIONS; **Attachment No. 18A**,
14 M/V KLAHOWYA, WSF DRAWING 8402-639-095-01, HOMELAND
15 SECURITY PLAN; **Attachment No. 18B**, ALL VESSELS, WSF
16 DRAWING 8000-639-095-01, HOMELAND SECURITY TYPICAL
17 WIRING DIAGRAM STANDARD; **Attachment No. 18C**, ALL
18 VESSELS, WSF DRAWING 8000-639-095-02; HOMELAND
19 SECURITY PLAN TYPICAL FOUNDATIONS STANDARD;
20 **Attachment No. 18D**, M/V KLAHOWYA, WSF DRAWING 8402-639-
21 095-02, HOMELAND SECURITY CABLING & WIRING DIAGRAM.)

22
23 **NOTE:**

24 WSF supplied Items on **Attachment No. 18D.**

- 25 B. Enclose the ladder as shown on **Attachment No. 18** at each end with a wire
26 mesh enclosure. Relocate ladders and modify the passenger bench seating.

27
28 **NOTE:**

29 Wherever new penetrations are required they shall maintain the watertight and fire
30 ratings of the bulkhead or deck being penetrated. Existing non-poured bulkhead and
31 deck penetrations may be reused New Multi-Cable Transits shall be Nelson type.
32 Test all deck, bulkhead and hull penetrations in company with and to the satisfaction
33 of the USCG and WSF Inspector and the Staff Chief Engineer.

- 34 C. Fabricate equipment cabinet and electronic security devices foundations and
35 camera mounts in the locations shown on **Attachment No. 18A.**

- 36 D. Install new cables required by **Attachment No. 18A, 18B, 18C and 18D.**
37 Insure cables and wires installed by this Item are run and marked, and
38 continuity tests are made in accordance with **Attachment No. 2.** Prior to
39 installing any fiber optic cables perform an OTDR test and submit results to

the WSF Inspector. Perform a second OTDR on the fiber cables after installation. Compare the results to the pretest and submit results to the WSF Inspector.

E. Obtain the services of ABSCO Alarms, Phone No. (206) 367-1166 to make all connections and demonstrate the operation of the system.

F. Install stud runs and penetrations, run cables and install the security hardware and electrical components as shown on **Attachment No. 18B**.

G. Replace all disturbed structural, thermal, and acoustical insulation to match original installation.

H. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat Wasser MC Miozinc Green, to obtain 3 to 4 mils (DFT) to all new surfaces and prepared surfaces. Apply one (1) coat Wasser MC CR Buff, to obtain 3 to 4 mils (DFT) to all new surfaces and prepared surfaces. Hand-stripe all edges. Top-coat with Wasser MC Luster, to a minimum of 3 mils (DFT) to match.

19. SECURITY ENCLOSURE **{SECURITY}**

A. Install a new security enclosure shown on **Attachments No. 19 thru 19B**. (**Attachment No. 19**, M/V KLAHOWYA, WSF DRAWING 8402-639-003-01, SECURITY EQUIPMENT ENCLOSURE STRUCTURAL ARRANGEMENT AND DETAILS; **Attachment No. 19A**, M/V KLAHOWYA, WSF DRAWING 8402-639-090-01, MISCELLANEOUS ELECTRICAL MODIFICATIONS FOR TEXAS DECK ENCLOSURE, NO. 1 END; **Attachment No. 19B**, M/V KLAHOWYA, WSF DWG 8402-639-012-01, SECURITY EQUIPMENT ENCLOSURE VENTILATION ARRANGEMENT & DETAILS.)

B. Electrical installation for the new enclosure shall be in accordance with **Attachment No. 19A**.

C. Provide two (2) new 30 x 78 weather access doors. The deck gear locker shall have ¼ inch high undercut.

D. Install a WSF furnished CO2 fire extinguisher in the Security in a location designated by the WSF Inspector.

E. Install the ventilation system for the security room as shown on **Attachment No. 19B**.

F. Replace all disturbed structural, thermal, and acoustical insulation to match original installation.

G. Prepare all surfaces affected by this work to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat Wasser MC Miozinc Green, to obtain 3 to 4 mils (DFT) to all new surfaces and prepared surfaces. Apply one (1) coat

Wasser MC CR Buff, to obtain 3 to 4 mils (DFT) to all new surfaces and prepared surfaces. Hand-stripe all edges. Topcoat with Wasser MC Luster, to a minimum of 3 mils (DFT) to match surrounding.

20. WEIGHT CONTROL
{SECURITY}

- A. The Contractor shall document weight changes and centers of gravity throughout the execution of work.
- B. At the pre-arrival conference the Contractor shall prepare and submit to WSF for approval, a plan for monitoring weight and center information for all weights added, removed and relocated during this Vessel availability. This plan will address individuals, equipment and techniques to be used in the weight control process including the following points:
 - 1. Certification of weighing facilities.
 - 2. Where (location) the weighing will be accomplished.
 - 3. If software is to be used, identify the software.
 - 4. A sample data sheet showing date and time of weighing, the individual responsible for the activity, material identification, unit weight, quantity, center of gravity, and final disposition of the material (i.e. added, removed or relocated).
- C. Data sheets generated by the approved process shall be submitted to WSF with progress invoices. Progress payments WILL NOT be made until all of the required weight control records have been reviewed by the WSF Representative.
- D. The Vessel currently holds 14.83 LT of lead ballast in Engine Room No. 1 (27' forward of amidships, 28' STBD of centerline and 17' above baseline).
- E. It is the intention of WSF to remove all or part of this ballast to compensate for the weight added during the work period.
- F. When the work is essentially complete, but not later than two weeks (2) prior to re-delivery, WSF will advise the Contractor as to the amount of ballast to be removed.
- G. For bidding purposes, the Contractor can assume all of the ballast will be removed. Removed ballast will be disposed of by the Contractor.

1 **21. SEWAGE LIFT TANK INSPECTION**

2 **{STRUCTURAL PRESERVATION}**

3 **NOTE:**

4 Tank will be pumped down to low suction prior to Vessel arriving at the shipyard,
5 however some amount of sludge will exist in the tank, which should be considered
6 HAZARDOUS, in that the sludge may contain harmful bacteria and emit poisonous
7 and flammable gasses. Contractor shall take necessary safety and health procedures
8 required during this work.

9 A. Pump out all residual effluent in the tank and dispose in accordance with
10 appropriate environmental regulations. The sewage lift tank is located in the
11 No. 2 Engine room.

12 B. Provide labor, material and equipment to clean, sanitize, and ventilate, the
13 sewage holding tank. The sewage holding tank shall be cleaned sanitized and
14 certified to be gas and toxic vapor free, and certified "SAFE FOR
15 WORKERS" and "SAFE FOR HOT WORK". Maintain Certificate until
16 completion of all affiliated work. Open access cover and upon completion of
17 affiliated work close up using new fasteners, washers, grommets and gaskets.

18 C. Accomplish a high-pressure water wash (minimum 3500 psi) and disinfect,
19 pump out and dispose all liquid.

20 D. Inspect the interior of the tank for deteriorated coatings and fitting. Submit a
21 written report of findings to the WSF Inspector.

22 E. Conduct an inspection of the tank interior in the presence of the WSF
23 Inspector and the Vessel's Staff Chief Engineer prior to closing up. Ensure
24 that all valve and pipe connections are properly made up and that all plugs and
25 debris are removed from the tank.

26 **NOTE:**

27 For purpose of bidding assume that 60 square feet of deteriorated coatings in the
28 sewage lift tank will require surface preparation and recoating. Upon completion of
29 work, the Contract shall be adjusted upward or downward to account for the actual
30 square footage.

31 F. Surface preparation shall be to an SSPC-SP1-11, power tool cleaning to bare
32 metal. Recoating shall be two (2) coats of International Intertuf 262 series
33 Epoxy, 6 mils minimum (DFT) each coat.

(END)